SEISMIC SAFETY COMMITTEE (SSC) SUBCOMMITTEES CHAIR MEETING MINUTES

Thursday, December 6, 2001

Washington State Emergency Management - Building 20

Attendees:
Ron Teissere - Department of Natural Resources Geology and Earth Resources
Chris Jonientz-Trisler – Federal Emergency Management Agency Region X
Eric Holdeman – King County Office of Emergency Management
Craig Weaver – University of Washington Geophysics Program
Ken Korshaven – City of Lynnwood Community Development
Tim Nogler – State Building Code Council
Tim Walsh – Department of Natural Resources Geology and Earth Resources
Marty Best – Washington State Emergency Management Division
George Crawford – Washington State Emergency Management Division
San-Dee Stewart – Washington State Emergency Management Division
Dave Nelson – Washington State Emergency Management Division

Members Absent:
Tony Qamar – University of Washington Earth and Space Sciences

CALL TO ORDER RON TEISSERE

1. The meeting was called to order by Ron Teissere, SSC Vice Chair at 9:00 a.m. He stated three of the four subcommittees had an initial meeting and there was a need now to provide input to the update of the Washington State Hazard Mitigation Strategy (HMS) as it pertains to seismic issues.

2. The format to follow was that used in the HMS/HMST issues and recommendations letter dated October 29, 2001. Those specific issues plus any the subcommittee's made will be forwarded for the update.

Issue 1. Recommendation 1-1 (pg 20). Update to read: Legislation passed (RCW 18.220 and WAC 308-15) requiring a geologist licensing program effective July 1, 2001. See http://www.wa.gov/dol/bpd/geofront.htm.

Issue 2. Recommendation 2-1 (pg 25). Add new last sentence to read: Communities should collect and establish a good database of landslides in their jurisdictions similar to the City of Seattle model.

Recommendation 2-6 (pg 26). Update to read: Develop earthquake hazard mapping and tsunami inundation hazard maps for vulnerable communities along the coast and Puget Sound.

Add new Recommendation 2-10 (pg 27). Establish GIS standards that should have geographic formats and that are transferable.

Issue 5. Transportation (pg 38). Change "A 40-year bridge retrofit…" to "A long term retrofit…".

Recommendation 5-1 (pg 39). Update to read: Assess the disaster survivability of lifeline routes to include state and local roads, bridges, transit routes, railroad, airport, and port facilities. Determine appropriate retrofits and prioritize emergency routes. Accelerate retrofit program and insure connectivity to local programs. Add agency: County Road Administration Board (CRAB).

Add new Recommendation 5-3 (pg 40). Insure that other lifelines (water, sewer, pipelines, communication, etc) are tied in and included in these efforts. Agencies: WSDOT, Ecology, EPA.

Issue 6. Earthquake (pg 41). Update percent of homeowners to 12%.

Recommendation 6-2 (pg 42). Change to read: "Develop a policy for site specific…".

Recommendation 6-8 (pg 43). Add new last sentence to read: The clearinghouse should collect and document cost effective mitigation measures.

Recommendation 6-9 (pg 43). Change to read: Promote appropriate hazard insurance and incentives as means of mitigating the economic effects of hazards.

Issue 7. *Forecast and Warning Tools* (pg 45). Update and insert above "The Washington State Grange…" paragraph: Additionally, Washington's coastal counties now receive weather and emergency alert and warning information from a radio transmitter site at Mt. Octopus located in western Jefferson County. The radio transmitter covers the coastline from Cape Flattery to Long Beach and was dedicated September 11, 2000.

The installation of an additional twenty strong motion instruments in the greater Seattle area was completed in September 2001. This brings the total to sixty-eight real time strong motion instruments in the Advanced National Seismic Systems (ANSS) regional network (forty-two in the Seattle-Tacoma area, seventeen in other parts of Washington and nine in the Portland-Eugene area). There are also approximately another fifty strong motion instruments in the region, not with real time telemetry,

operated by other organizations (USGS, National Strong Motion Program, USGS Central Hazards Division, Batelle Northwest, etc).

Issue 7. *Tsunami Warning* (pg 46). Update second paragraph: Additionally, NOAA established a new Deep-ocean Assessment and Reporting of Tsunami (DART) site off the Washington coast at approximately 128.5 degrees North latitude, 47 degrees West longitude. This now brings the total to five detection buoy systems from the Alaskan coastline down to the Oregon coastline. Each system includes a Bottom Pressure Recorder (BPR) that can measure tsunami wave amplitudes of less than one centimeter in the deep ocean and a surface buoy that sends the wave data to shore stations via satellite.

Issue 7. *Lahar Warning* (pg 47). Add after the sentence "from a Mt. Rainier Lahar". The system consists of five acoustic flow monitor (AFM) stations that have been placed within tens to hundreds of meters from the active flood plain in the upper reaches of both the Puyallup and Carbon River valleys. The network in each valley is located 25 km upstream from Orting, which is near the confluence of the two valleys. Each AFM station consists of a microprocessor-based data logger that measures the amplitude, frequency, and duration of ground vibrations detected by an exploration class geophone. Two AFM stations in each valley are located above flood level but within the expected inundation zone of a significant Lahar. Those stations, then, will serve as "dead man" devices whose destruction by a major Lahar would be noted by the system. The other three stations in each valley are located above the anticipated Lahar inundation limit with the expectation that they will monitor ground vibrations and transmit data throughout passage of a Lahar. Data from all stations are transmitted by radio to duplicate base station computer located at the Law Enforcement Support Agency, City of Tacoma and Pierce County 9-1-1 Center in Tacoma, and the Washington State Emergency Operations Center at Camp Murray.

Add new Recommendation 7-2 (pg 47) with High Priority Recommendation. Statewide adoption of NWS/NOAA tone alert radio as a statewide warning system.

Add new Recommendation 7-3 (pg 47) with High Priority Recommendation. Washington State needs to develop a strategy/funding to support the USGS ANSS implementation program for the state. Agencies: UW, DNR, EMD,

Change old Recommendation 7-2 to 7-4. Change old 7-3 to 7-5.

Issue 8. Add update at the end of state agency plans and procedures (pg 48): The Washington State Seismic Safety Council published the summary of their findings and recommendations concerning state policy for dealing with earthquake risks in *Washington State Seismic Safety Council Policy Recommendations*, September 1986.

Recommendation 8-1 (pg 50). Change to read: Develop local hazard reduction plans/strategies and integrate them with other planning documents (COA/GMA).

Issue 10. Recommendation 10-1 (pg 54). Change first sentence to read: Inventory and publish a listing of school buildings as to their risk, by district.

Recommendation 10-5 (pg 54). Change last sentence to read: Fuel, utilities, businesses and industry, or other suppliers should be considered, as well.

Issue 12. New Recommendation 12-1 (pg 61). High Priority Recommendation. Legislation needs to be reintroduced this year for the State of Washington to adopt the International Building Code (IBC). Recommend Lead Agency (ies). State Building Code Council, Washington Association of Building Officials,

Recommendation 12-6 (pg 62). Delete last two sentences.

Old Recommendations 12-1 through 12-14, change numbering by one.

Appendix C. (pg 101). Add the following:

Washington State Emergency Management Division & Federal Emergency Management Agency Region X. (2001). Hazard Mitigation Survey Team Report for the February 28, 2001 Nisqually Earthquake (Report DR-1361-WA). Bothell, WA: Author.

Washington State Military Department, Emergency Management Division. (1998). Earthquake Safety In Washington State, A Progress Report on Activities for the Period 1992-1997. Tacoma, WA: Author.

Washington State Seismic Safety Council. (1998). Washington State Safety Council Policy Recommendations. Tacoma, WA: Author.

Appendix E (pg 121). Add the following:

February 28, 2001 (DR-1361-WA)

At 10:54 am PST, February 28, 2001, an earthquake of magnitude 6.8 (lasting as long as 45 seconds) struck the Puget Sound area. The epicenter was located approximately 50 miles south of Seattle and 11 miles northeast of Olympia in an area locally known as the Nisqually Delta. The earthquake caused damage throughout Puget Sound and into areas of eastern Washington.

On March 1, 2001, President George W. Bush declared six counties in western Washington eligible to receive federal disaster assistance for damages caused by the Nisqually Earthquake. Over the following two months, 18 more counties were added to the declaration, bringing the total number of counties declared eligible for federal

assistance to 24. The Federal Emergency Management Agency (FEMA), state and local agencies, and private relief organizations provided immediate assistance under FEMA DR-1361-WA.

3. Listed below are the recommendations from the Hazard Mitigation Survey Team Report (HMST) dated 28 February 2001 for inclusion in the HMS update:

Building Codes (pg 26). Reverse Recommendation 3 and 4.

Earthquake Disaster Information (pg 27). Add to last paragraph of background:

The FEMA HAZUS earthquake loss estimates are forecasts of damage, and human and economic impacts that may result from future earthquakes. They are not precise predictions, but rather estimates based on current scientific and engineering knowledge. WSEMD and FEMA Region X have partnered to develop a HAZUS Training Program that is made available to the public and private sectors in Washington. HAZUS was used extensively during the response phase of the Nisqually Earthquake.

Add new Recommendation to read: Continue the validation and refinement of HAZUS with data from this event and integrate Shake maps into HAZUS model.

Earthquake Preparedness (pg 28). Change Recommendation 1 to read: Expand a version of "Drop, Cover, and Hold" campaign designed for adults to include a multi-environment such as the potential of driving in their car or walking down a street, etc.

Add Recommendation 2 to read: Make the approved model school plan available to public and private entities.

Change Recommendation 5 to read: Provide funding and/or incentives for non-structural seismic mitigation measures in facilities that serve large numbers of vulnerable populations (i.e. children, elderly, low income).

Delete Recommendation 6.

Critical Lifelines (pg 29). Change Recommendation 1 to read: Assess the disaster survivability of lifeline transportation routes, to include state and local roads, bridges, transit routes, railroad, ferries, and port facilities. Determine the needed post-disaster transportation system requirement and develop an adequate retrofit program that includes appropriate emergency route planning.

Change Recommendation 3 to read: Enhance and expand the Washington State Department of Transportation (WSDOT) Bridge Retrofit

Program to include columns and foundations. The retrofit program should be designed to enhance overall system performance.

Add Recommendation 6 to read: Encourage WSDOT to develop a real-time monitoring program for critical state bridges, with the data available to regional Shake maps.

Add Recommendation 7 to read: Determine the level of seismic and slope stability monitoring required to adequately assess other lifeline systems (pipelines, railroad, transmission, etc.) following an earthquake.

Critical Facilities (pg 31). Combine Recommendation 2 and 3 to read:

Accelerate Hazard mapping in Eastern and Western Washington to include:

- Liquefaction and amplification mapping
- Tsunami Inundation
- Volcanic Hazard Zones

These maps will provide public and private officials with the necessary tools to develop HIVAs, risk assessments of critical facilities, prioritizations of retrofit projects and land use planning.

New Recommendation 3 to read: Review hazard zones in Washington (i.e. landslide run out zones, tsunami inundation, glacial outburst, potential lahar pathways, and flood plains) and develop draft legislation to restrict building of critical facilities in these areas.

Seismic Safety Commission (pg 32). Change Seismic Safety Commission to read: Seismic Safety Committee

Earthquake Loss Estimates (pg 33). Delete and include in Earthquake Disaster Information (pg 27).

Incentives for Seismic Upgrades (pg 34). Reverse Recommendation 3 with Recommendation 1 and have it read: Encourage lending institutions to provide low-interest mitigation loans, and government provide tax incentives for businesses and homeowners to do structural seismic safety upgrades.

Long Term Planning (pg 35). Change Recommendation 1 to read: Take advantages of strategy to include hazard mitigation into the traditional planning process using CAO.

4. These minutes will be reviewed and forwarded to Marty Best for inclusion in the updated Washington State Hazard Mitigation Strategy Plan.

5. The meeting was adjourned at 12:30.